

Application No. 10/757,607
Response to Office Action

Customer No. 01933

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

ALLOWABLE SUBJECT MATTER

The Examiner's indication of the allowability of the subject matter of claim 3 is respectfully acknowledged. Claim 3, however, has not been rewritten in independent form at this time since, as set forth in detail hereinbelow, it is respectfully submitted that its parent claim 1 also recites allowable subject matter.

THE SPECIFICATION

The abstract has been amended to better comply with the requirements of MPEP 608.01(b), as required by the Examiner. No new matter has been added, and it is respectfully requested that the amendments to the abstract be approved and entered, and that the objection to the abstract be withdrawn.

THE CLAIMS

Claims 1-10 have been amended to more clearly and positively recite the features of the present invention, as well as to make some minor grammatical improvements and to correct some minor

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antecedent basis problems so as to put the claims in better form for issuance in a U.S. patent.

In addition, new method claims 11-17 depending from claim 10 have been prepared based on the subject matter of claims 2-8, respectively.

No new matter has been added, and it is respectfully requested that the amendments to claims 1-10 and the addition of claims 11-17 be approved and entered.

THE PRIOR ART REJECTION

Claims 1 and 8-10 were rejected under 35 USC 102 as being anticipated by USP 6,320,742 ("Wada et al"); claims 2 and 4 were rejected under 35 USC 103 as being obvious in view of Wada et al; and claims 5-7 were rejected under 35 USC 103 as being obvious in view of the combination of Wada et al and USP 4,494,299 ("Franklin et al"). These rejections, however, are respectfully traversed.

According to the present invention as recited in clarified amended independent claim 1, an anode member for a solid electrolytic capacitor is provided which comprises a valve metal thin plate; a valve metal powder layer formed on at least one plate surface of said valve metal thin plate; and at least one groove formed in said valve metal powder layer. And as recited

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in amended claim 1, the valve metal powder layer having the groove formed therein is sintered to form the anode member.

Similarly, according to the present invention as recited in clarified amended independent claim 10, a method of producing an anode member for a solid electrolytic capacitor is provided which comprises forming a valve metal powder layer on at least one plate surface of a valve metal thin plate and forming at least one groove in the valve metal powder layer, and then sintering the valve metal powder layer having the at least one groove formed therein.

With this structure, and by this method, the at least one groove in the valve metal powder layer suppresses deformation of the anode member during sintering even if the anode member is sintered a relatively high temperature, which is required to achieve sufficient fusion between the valve metal powder layer and the valve metal thin film. That is, the at least one groove in the valve metal powder layer divides the valve metal powder layer into small sections, such that shrinkage occurs in the individual sections and is thereby dispersed.

By contrast, without the at least one groove of the claimed present invention, the valve metal powder layer is provided in a single large section and significant deformation is caused by the shrinkage. This is because the shrinkage in the single large section of the layer without grooves occurs at a greater

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magnitude than shrinkage in the individual sections when the at least one groove is provided.

Accordingly, with the structure and method of the present invention as recited in clarified amended independent claims 1 and 10, deformation during sintering of the valve metal powder layer is suppressed, and an improved anode member is provided.

As recognized by the Examiner, Wada et al discloses an anode electrode 10 that may be a sinter having a porous undulating surface.

It is respectfully submitted, however, that Wada et al does not disclose, teach or suggest providing a valve metal powder layer including at least one groove, and then sintering the valve metal powder layer having the groove to form an anode member, as according to the structure and method of the claimed present invention. Indeed, it is respectfully submitted that Wada et al does not even disclose how the sinter having the undulating surface is formed.

In item 6 of the Office Action, the Examiner asserts that the presence of process limitations in product claims cannot impart patentability to the product. However, with respect to product claims 1-9 of the present application, it is respectfully pointed out that the actual product itself - i.e., an anode member having reduced deformation - does distinguish over the structure of the prior art. Namely, as explained hereinabove,

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with the structure and method of the claimed present invention, the at least one groove in the valve metal powder layer suppresses deformation of the anode member during sintering even if the anode member is sintered a relatively high temperature, which is required to achieve sufficient fusion between the valve metal powder layer and the valve metal thin film. As a result, an improved anode member is provided.


In view of the foregoing, it is respectfully submitted that amended independent claims 1 and 10, as well as claims 2-9 and 11-17 respectively depending therefrom, all patentably distinguish over Wada et al, taken singly or in combination with Franklin et al, under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned for prompt action.

Respectfully submitted,


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